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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/836,209	04/16/2001	Shao-Tsu Kung	CEIP0024USA	7409

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MERRIFIELD, VA 22116

EXAMINER

BRANT, DMITRY

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/836,209

Applicant(s)

KUNG ET AL.

Examiner

Dmitry Brant

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 6/18/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 6/18/2004 have been fully considered but they are not persuasive.

In response to applicant's argument that Examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

The "combination mode" of Oberteuffer et al. teach combining verbal input M1 and handwritten input M2 to produce a third result (FIG. 2, Col. 62-66). Let us analyze each of the inputs and the combined output of the Oberteuffer's system.

I. M1 produces a set of (*several*) **text** strings, letters, characters, or words (Col. 5, lines 4-5). In other words, the output of M1 is textual.

II. M2 is a translation of "hand-printed or cursive **writing** written by an operator using electronic pen into machine encoded text data forming part of the electronic document." (Col. 4, lines 40-44). Therefore, the output of M2 is also textual, which suggests that the outputs of M1 and M2 consist of the same types of elements

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(characters, strings, words, etc). Hence, we have two textual sets that are to be combined in step III (as opposed to words from M1 and checkmarks, circles, etc. from M2)

III. Here Oberteuffer et al. teach combining verbal (M1) and handwritten (M2) inputs and producing "an improved recognition of the input speech from additional data in mode M2 to select from among recognition candidates identified by mode M1" (Col. 5, lines 8-11). In other words, the combination of M1 and M2 (let's call it MC) is limited to at most the elements contained in M1 - elements of M2 which are not in M1 cannot be in MC since the results are chosen from among the elements of M1. Therefore, M2 is either a full subset of M1 or the elements in M2 which are not in M1 are ignored. For practical purposes, M2 is within M1.

Now let us look at possible operations between the M1 and M2 sets. These are: a union of M1 and M2, an intersection of M1 and M2, and a difference of M1 and M2. Because M2 is within M1, a union of these sets does not make sense from a practical perspective. Therefore, only an intersection of M1 and M2 or a difference between M1 and M2 can be used for further narrowing down the elements of M1. Both of these operations are equally suggested by the Oberteuffer et al.'s reference and would have been obvious to one of ordinary skill in the art.

In light of the above, it is clear that any practitioner with ordinary skills in the art would not need to use applicant's disclosure in order to deduce that the resulting set MC is either an intersection or a difference of M1 and M2. Hence no improper hindsight reasoning has been used by Examiner.

2. Applicant's arguments against the "obviousness" of combinations of Oberteuffer et al. and Waibel or Lindhorn et al. are moot, as Claim 1 was not rejected on the basis of the above combinations. Claim 1 was rejected as being obvious over Oberteuffer et al. in view of Young et al.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being obvious over Oberteuffer et al. (6,438,523), in view of Yong et al. (6,064,959).

Oberteuffer et al. discloses:

- utilizing a speech recognition algorithm to generate a first list according to verbal input ("several text strings, letters, characters") - (**elem. 204, FIG. 2, Col. 5, lines 3-6**)
- utilizing a character recognition algorithm to generate a second list according to handwritten input - (**Col. 5, lines 6-8**)
- generating a third list that is an intersection of characters common to the first list and the second list - (**Col. 5, lines 8-11**)

Also, Oberteuffer et al. disclose an embodiment for using both verbal and handwritten inputs simultaneously. (FIG.3 and Col. 5, lines 12-23)

Oberteuffer et al. do not disclose "presenting the third list" to a user.

Young et al. teaches a disclosing a list of words to the user and permitting the user to choose the correct word from the list (Col. 1, lines 50-58)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Oberteuffer et al. as taught by Young et al. in order to present the user with a list of possible choices for the recognized word, because it would improve the accuracy of the speech recognition process. Here, the user chooses the final candidate for the recognized word from a list of possible words and therefore avoids the problem of computer incorrectly choosing the final version of the word based on incomplete information.

5. Claims 2-8 are rejected under 35 U.S.C. 103(a) as being obvious over Oberteuffer et al. and Young et al., and further in view of Larkey (5,127,055) and Carman, II (5,454,046).

As per claim 2, Oberteuffer et al. disclose a system comprised of a speech recognition engine and a cursive handwriting recognition engine (elems. 108, 110, FIG. 1).

Oberteuffer et al. and Young et al. do not disclose a "database from which characters are selected by the speech recognition algorithm and the character recognition algorithm to fill the first list and the second list, respectively".

Larkey teaches a speech recognition system that "processes and analyzes the incoming speech and compares the incoming speech to reference patterns stored in a reference pattern storage memory." (Column 4, lines 13-16)

Carman, II teaches a handwriting recognition system that has "a user specific recognition database for storing data pairs" (48, See FIG. 2 and Column 2, lines 41-43)

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the recognition engines of Oberteuffer et al. and Young et al. to use the databases for word storage, as taught by Larkey and Carman, II. The motivation for doing so would have been the improved vocabulary capacity of the speech and handwriting recognition systems.

As per claims 3 and 8, Oberteuffer et al. disclose a system comprised of speech recognition engine and cursive handwriting recognition engine (elems. 108, 110, FIG. 1)

Oberteuffer et al. and Young et al. do not disclose a "adding a first character to the database, the first character generated by the user using an auxiliary input method".

Larkey teaches a speech recognition system that "that features dynamically adding new reference patterns to the stored reference patterns during this speech recognition process in response to the recognition correction actions and providing such

additional reference patterns for use in recognizing new unknown speech input utterances.” (Column 2, lines 25-30)

Carman, II teaches a system that “queries the user for textual data and then stores a new data pair “, “thus improving subsequent recognition by virtue of an augmented user specific sample recognition database file” (Column 2, line 62 – Column 63, line 6). Carman, II also teaches the use of keyboard (28, FIG. 1).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the recognition engines of Oberteuffer et al. and Young et al. to use databases that can store additional user input, as taught by Larkey and Carman, II. The motivation for doing so would have been an ability to “train” the recognition system in Oberteuffer et al. to understand new words or characters. Additionally, at the time of the invention it would have been obvious to a person of ordinary skill in the art that if initially the vocabulary set stored in the database was empty, the users would have to “train” the recognition system by adding new words/characters to the empty database through keyboard, as taught by Carman, until the database contained sufficiently large number of words/characters for the proper operation of the recognition system.

As for claims 4-5, Oberteuffer et al. disclose a system comprised of speech recognition engine. (108, FIG. 1)

Oberteuffer et al. and Young et al. do not disclose a system where “speech recognition algorithm utilizes a first standard for speech recognition, and adapts the first standard to verbal characteristics of the user”

Oberteuffer et al. also do not disclose a system where “characteristics of the user corresponding to the first character are added to the database”

Larkey teaches a speech recognition system that “that features dynamically adding new reference patterns to the stored reference patterns during this speech recognition process in response to the recognition correction actions and providing such additional reference patterns for use in recognizing new unknown speech input utterances.” (Column 2, lines 25-30)

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the speech recognition engine of Oberteuffer et al. and Young et al. to use new input from the user as a standard and to store it in the database for future reference, as taught by Larkey. The motivation for doing so would have been an ability to “train” the speech recognition system to “learn” new characters and words, thus adjusting to the idiosyncrasies of each user.

As for claims 6-7, Oberteuffer et al. disclose a system comprised of handwriting recognition engine. (110, FIG. 1)

Oberteuffer et al. and Young et al. do not disclose a system where “the character recognition algorithm utilizes a second standard for character recognition, and adapts the second standard to handwriting characteristics of the user.”

Oberteuffer et al. and Young et al. also do not disclose a system where "the handwriting characteristics of the user corresponding to the first character are added to the database."

Carman, II teaches a system that "queries the user for textual data and then stores a new data pair ," "thus improving subsequent recognition by virtue of an augmented user specific sample recognition database file" (Column 2, line 62 – Column 63, line 6).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the handwriting recognition engine of Oberteuffer et al. and Young et al. to use new input from the user as a standard and to store it in the database for future reference, as recited by Carman II. The motivation for doing so would have been an ability to "train" the handwriting recognition system to "learn" new characters and words, thus adjusting to the idiosyncrasies of each user.

Conclusion

6. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

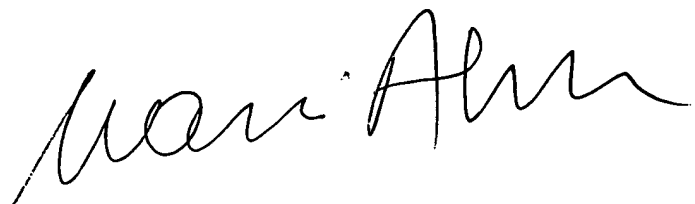
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Brant whose telephone number is (703) 305-8954. The examiner can normally be reached on Mon. - Fri. (8:30am - 5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis Ivars Smits can be reached on (703) 306-3011. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Tech Center 2600 receptionist whose telephone number is (703) 305- 4700.

DB
9/2/04



**DANIEL ABEBE
PRIMARY EXAMINER**